

A Systematic Review of Online Chinese as a Second Language Learning: Advantages and Challenges

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Abstract

"Internet+Chinese language education" represents a forward-thinking approach for Chinese as a foreign language, aligned with key initiatives such as "The Belt and Road" and the "Internet+" national strategy (Nie, 2023). The integration of educational technology into Chinese language instruction for non-native speakers offers innovative pedagogical possibilities, promising significant improvements in student engagement and learning outcomes. However, research on online Chinese language learning remains in its early stages, with relatively few studies available in this area (Nguyen et al., 2014). Online tools and applications for teaching Chinese have gained traction over the last decade, marking a prominent trend in the field. This study provides an extensive and nuanced review of current research, analyzing materials from February 2014 to March 2024 to assess both the benefits and challenges of online Chinese language education. Results reveal that while online learning affords substantial flexibility and convenience for students and teachers, it still encounters challenges such as technological limitations and classroom interaction. Of the initial 227 papers reviewed, 25 met the criteria for inclusion and underwent comprehensive analysis.

Keywords: Chinese as a Second Language(CSL), Online Learning, Advantages, Challenges

Introduction

Learning a second language can help dispel prejudices, which improves relations between nations (Min et al., 2022). Chinese is the most widely spoken language in the world, both as a second or foreign language and as the official language of China (Ju et al., 2022). Nearly 70 countries and regions all over the world have gradually incorporated Chinese into their national education systems. Before 2023, the number of people learning Chinese overseas exceeded 20 million, and the number of overseas Chinese education institutions is also increasing year by year (Intelligence, 2023). Despite the increasing number of international institutions offering Chinese language education, class capacity and teacher resources are still quite limited (Zhang & Wang, 2020), which results in limited Chinese input for learners. The issue of inadequate training personnel for upcoming overseas Chinese language teachers is

gaining more and more relevance. Online courses are a viable way to provide more students with the chance to study Chinese (Kong, 2021).

In the 21st century, language teaching is inseparable from technology (Shi & Stickler, 2019). Chinese as a Second Language (CSL) education primarily takes two forms: traditional classroom instruction, including Confucius Institutes, Chinese training facilities, and language study programs, and online instruction, which utilizes advanced technologies. With the rise of computer-assisted language learning (CALL), online Chinese learning platforms have become essential tools for remote education, offering abundant resources, interactive features, and adaptability (Zhang & Du, 2023). These technologies not only improve learners' proficiency in speaking, reading, writing, and understanding Chinese structures (Lyu & Qi, 2020) but also enhance engagement and attendance through customized and interactive learning experiences (Yan Ju et al., 2022). Online education technologies, with their multimedia capabilities, rapid content conversion, and ease of access, expand classroom teaching content and improve efficiency (Olmanson et al., 2018). Moreover, high-quality online platforms have proven effective in promoting language acquisition, making CSL education increasingly popular in a globalized era (Chuah et al., 2016; He & Liu, 2022). Free and open learning resources provide CSL teachers and learners with diverse materials, while interactive resource-sharing platforms foster the integration of content knowledge, teaching methods, and technological innovations, further enhancing classroom effectiveness and learning outcomes (Alsheikhidris & Alfatih, 2020).

However, it is worth mentioning that online learning poses challenges to the teaching philosophy, course resource management, grade management, course network security management, teaching process management, and teaching evaluation of schools (Alsheikhidris & Alfatih, 2020). Many CSL researchers have a misconception that online courses are easier and require less workload than traditional classrooms because they do not have to attend classes every day (Miyamoto et al., 2017). But, this is far from the truth. Furthermore, there are separate learning settings in the online Chinese learning environment since most teacher-student communication is asynchronous. Ultimately, some researchers feel that the development of language learners' abilities may be impacted by the limited oral and listening exercises in online courses (Yan Ju & Yan Mei, 2020). Therefore, unreasonable course design, prolonged online teaching, inconvenient reading of electronic textbooks, inability to communicate face-to-face, and network fluctuations are all challenges currently faced in online CSL studying (Lan & Chen, 2014).

Online learning breaks through the limitations of time and space, providing more learners with convenient learning opportunities. However, how to learn Chinese efficiently in an online environment is still an important issue that needs to be solved. Through a systematic review, we can not only comprehensively sort out the existing research results and reveal the knowledge gaps, but also provide a clear direction for future research. In-depth exploration of the advantages and challenges of online Chinese learning will help optimize teaching design, improve learning outcomes, and further enhance learners' enthusiasm and learning experience. Therefore, systematically summarizing and analyzing the advantages and challenges of online Chinese as a second language learning not only provides valuable reference for educators, policymakers and technology developers, but also injects new impetus into promoting innovation and development of global Chinese teaching and learning.

Purpose of the Review

To begin with, the main objective of this article is to give a summary of what is currently understood about this subject. By compiling and reviewing a systematic review of the key issues and achievements in the field of online CSL teaching, the aim is to address the research issues through rigorous and transparent methods. For these reasons, it is crucial to review the research on CSL teaching published in journals. In addition, Based on similar reviews of foreign language learning and teaching research internationally, this article summarizes the methodological trends and hot topics of research papers on CSL learning published from 2014 to 2024, aiming to explore the current advantages and challenges of online CSL learning. It goes without saying that this can offer insightful information for further studies on online Chinese learning as well as other language instruction. This review attempts to address the following questions:

- 1) What is the promoting effect of online CSL learning on Chinese language acquisition for Chinese language learners?
- 2) What are the challenges currently faced by online CSL learning internationally?

After exploring the research purpose and research questions, this study will use the Systematic Literature Review and Meta-Analysis (PRISMA) model in the following chapters to explain the order of the review and the framework of writing to address the issues raised.

Methodology

Introduction

Systematic Literature Review (SLR) is an ancient and vibrant scientific research method that involves reviewing and evaluating relevant literature to understand previous research in a particular field or topic. First of all, it is based on a certain research purpose or topic, obtaining information by investigating literature, so as to comprehensively and correctly understand the research problem to be studied. Secondly, it designs the content of the topic or hypothesis into specific, operable, and repeatable literature research activities, which has certain significance in solving special problems. Researchers can find materials related to their research topics through libraries, archives, online websites and other channels, collect relevant information, read a large number of journals, papers, reports and other publications and classify them, keep up with the research progress in this field, and focus on Think deeply about the research topic, understand previous research progress and unresolved problems, put forward arguments, and lay a solid foundation and background for the implementation of this research. The research process of SLR is shown in Figure 1;

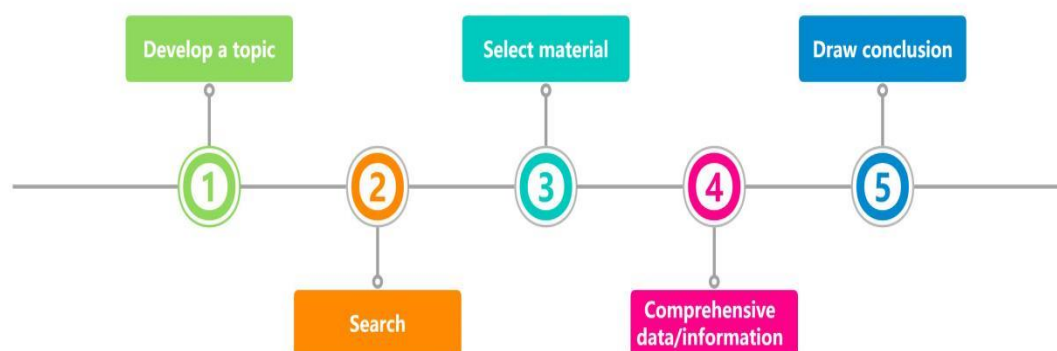


Figure 1. The research process of SLR

SLR is widely used in various disciplinary research, and its role is to (1) Understand the history and current situation of the problem. (2) It can form a general impression about the research object, which is helpful for observation and access. (3) Comparative information that can obtain real-life information. (4) Helps to understand the full picture of affairs.

Because of its content concentration, centralization, and systematization features, SLR can help peer scientific and technological workers read professional literature more quickly, comprehend relevant topics' history, advancement, and current issues, and perform well in scientific research orientation. The documents selected for this study were searched in three major databases: Google Scholar, Scopus and Web of Science. Only English-language publications, reviews, and conference proceedings are included in the search parameters.

Screening Steps

The main purpose of this study is to explore the current status, advantages, and challenges of online CSL learning. Considering the above research questions, the screening steps for this study are as follows:

In the first stage, In the review, the keywords used are: online, language, CSL, learning and teaching. The search period is restricted to English empirical studies published in academic peer-reviewed journals between December 2014 and March 2024. Perform automatic advanced retrieval on each of the three databases to discover potentially relevant research to examine.

In the second stage, The author adopted a global approach, considering papers from around the world, and searched major journals in the field of CSL teaching to ensure that empirical research on online CSL teaching was not overlooked. The study focused on approximately 227 articles in various fields, including education, social sciences, and computer science. 202 articles that were duplicates or outside the specified time range were removed, leaving 25 articles for more in-depth analysis.

In the third stage, Read articles identified through database retrieval separately for further screening. At this stage, in order to find articles that the database search did not turn up, the references of pertinent articles were also examined.. The methodology of the research is depicted in Figure 2:

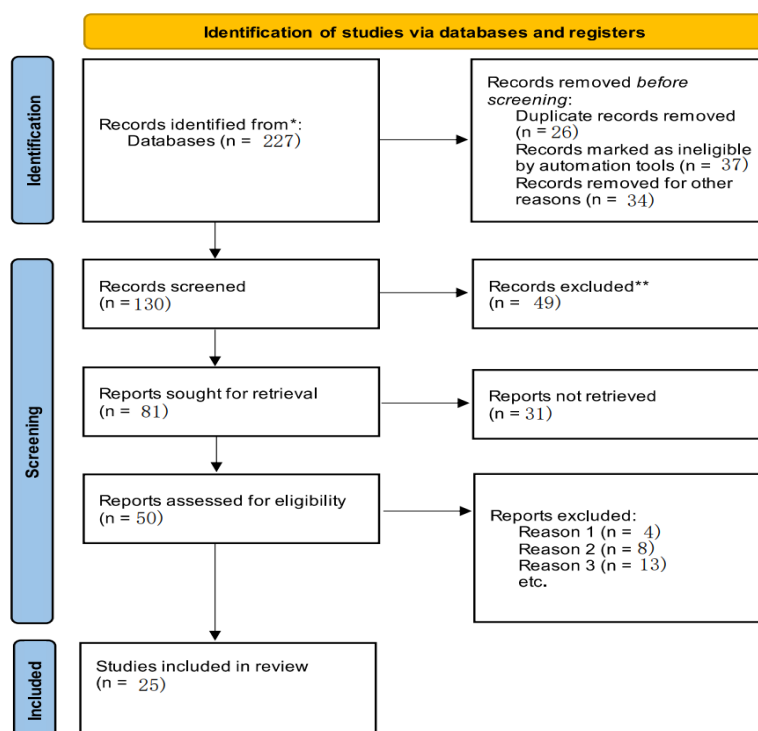


Figure 2. The PRISMA chart displays the number of files in each stage of the filtering process

Studies Found

There are 25 articles in the search results, which cover a wide range of topics related to online CSL learning, such as the current situation of Chinese as a foreign language learning, useful evaluations of online CSL learning by Chinese teachers and learners, and current challenges faced by online CSL teaching. Among them, 12 articles used quantitative research methods, 7 articles used qualitative research methods, and 6 articles used mixed research methods. Moreover, among the 25 studies, 4 articles mainly discussed the advantages of online CSL learning, 8 articles mainly discussed the challenges encountered by teachers and students in online CSL classes, and 13 articles not only discussed the advantages but also elaborated on the problems faced. Therefore, research results on such courses can also reveal fully online teaching courses.

Result

Among the 25 reviewed literature, the majority of the samples were composed of adult Chinese language learners, including international online CSL learners and online CSL learners who came to China to study Chinese. Most studies focus on students or teachers as the research objects, with a certain sample size. Only two articles observe online Chinese courses as the research objects, without a sufficient sample size. The results of the systematic literature review on online CSL are shown in Table 1.

Table 1

Results of a Systematic Literature Review of Online CSL

No .	Author	Research Objectives	Sample	P	M	Related Items	Findings
1	Yan Ju et al. (2022)	To explore the correlation between Chinese learners' attitude and participation in online Chinese learning and their course performance.	Students enrolled in three levels of Mandarin studies at USiM.	309	Quan	Advantages of Online CSL Teaching.	1. Most students believe that learning Chinese online is an interesting thing. Online CSL learning can improve student attendance and engagement. 2. Students tend to go through given online tasks and online communication with teachers who help them understand the topics taught.
2	Chuah et al. (2016)	Exploring online CSL learning website usability and design issues from the learner's perspective.	A second-year CSL student at the University of Malaya.	37	MI	Advantages of Online CSL Teaching.	Learners are highly satisfied with the ease of use of online Chinese websites. They believe that the use of multimedia elements in online teaching and the provision of localized teaching sounds and information content have the potential to promote learners' Chinese acquisition.
3	Sokolova (2021)	Survey on the feedback of	Chinese language	24	MI	Advantages and	1. In online learning,

		online Confucius Classroom CSL students and teachers on teaching effectiveness	learners and teachers at the Confucius Classroom at Ruse University, Bulgaria.			Challenges of Online CSL Teaching.	Chinese language learners believe that they can better manage their time and show more motivation in learning Chinese. Meanwhile, teachers have better opportunities to control classroom discussions. 2. Some teachers said that online teaching relies too much on Internet speed, thus affecting the enthusiasm of some students.
4	Zhao (2022)	Analyze the teacher-student interaction in online CSL teaching and explore whether it meets the needs of building a CSL virtual learning community.	Comprehensive online CSL course at the University of Cambodia.	65	Qual	Challenges of Online CSL Teaching.	1. The online learning environment is less stable and predictable than in-person instruction, and students have less opportunity to participate in Chinese language discussions. 2. The interactive form of online CSL teaching is individualistic, lacks group coherence, and cannot support the ongoing transfer of

							teaching resources. The speed of online learning can also affect students' ability to receive comprehensive classroom knowledge.
5	Alsheikhidris & Alfatih (2020)	By analyzing and discussing micro courses and MOOC courses, this paper explores the challenges that online Chinese courses pose to traditional school courses.	MOOC Chinese language course.	52	Qual	Advantages and Challenges of Online CSL Teaching.	1. Online CSL courses have unleashed the creativity of teachers in more aspects, driving them to go beyond themselves and focus more on more effective practices and innovative approaches. 2. Online teaching alienates the relationship between teachers and students, increases their dependence on it, and also distracts students' attention.
6	Chia-Ling et al. (2014)	Analyze the difficulties and related strategies of online Chinese teaching interaction.	Chinese video conference class.	12	MI	Challenges of Online CSL Teaching.	Most teachers believe that online Chinese language classes have limited choices of activities, low connection quality, students are not familiar with the software, lack a

							sense of immediacy (asynchronous images), lack of preparation, limited two-way communication and interaction, students feel frustrated with frequent connections, and teachers cannot use body language. Therefore, these factors can seriously distract students' attention.
7	Gao & Shi (2023)	Exploring teacher-student interaction in online CSL classrooms and face-to-face classrooms from the perspectives of both students and teachers.	Students and teachers taking Chinese courses at an Australian university.	39	MI	Advantages and Challenges of Online CSL Teaching.	<p>1. Students interact less in online classes and prefer face-to-face class interactions. Low-quality online teacher-student interaction will affect students' second language acquisition level.</p> <p>2. In online classrooms, students need to unmute or turn on their cameras to establish contact, and traditional classrooms are more conducive to observing body</p>

							<p>language, providing a more favorable environment for building connections and friendships.</p> <p>3. Students feel less intimidated when asking questions to teachers in online group discussion rooms than in face-to-face teaching.</p> <p>Online courses provide flexibility and convenience, making students more motivated to interact with peers.</p>
8	Fan & Tian (2022)	Investigating how student participation and the virtual learning environment affect Chinese language learners' ability to predict outcomes.	International students from eight universities located in different geographical areas of China.	447	Quan	Advantages of Online CSL Teaching.	<p>1. The majority of students think that online Chinese courses are effectively structured, offering lots of chances to engage with lecturers and peers as well as access extensive online learning resources.</p> <p>2. Geographical barriers are lessened by online learning, and student participation and the online</p>

							learning environment enhance Chinese language proficiency.
9	Zhang (2020)	To explore Chinese teachers' cognition of Chinese teaching, as well as their beliefs and opinions about online teaching.	CSL teachers in Danish higher education context.	7	Quan	Advantages and Challenges of Online CSL Teaching.	<p>1. Use resource sharing to enable teachers and students to easily share documents across platforms and work together in real-time.</p> <p>2. Creating and implementing a successful online course is time-consuming, and learning new digital tools increases the preparation time for teachers.</p> <p>3. Challenges brought by online CSL teaching include lack of interaction, insufficient timely feedback, and difficulty in maintaining students' enthusiasm for learning and attention once the novelty wears off.</p>
10	Zhang (2014)	Provide an overview of the creation and teaching of	Empirical research papers published	12	Qual	Challenges of Online CSL Teaching.	1. In online learning, students spend most of their

		online Chinese language courses.	between January 2006 and June 2013.				time on speaking and grammar, and listening, reading and writing are usually regarded as incidental. 2. Lack of familiarity with specific online environments and computers can lead to anxiety among learners about learning Chinese. 3. Younger learners lack more visual materials to attract attention and interest.
11	Fan & Tian (2024)	To investigate how international students' satisfaction with their online CSL learning is affected by the online learning environment, student participation, and academic success.	International students studying Chinese in Chinese higher education institutions.	440	Quan	Advantages and Challenges of Online CSL Teaching.	1. Online learning enriches the overall cross-cultural learning experience of international students, cultivates a sense of belonging and connectivity, thereby improving learning engagement and satisfaction. 2. Lack of online learning resources and poor academic performance have a negative

							impact on participants' satisfaction. 3. Online learners prioritize interaction with instructors for emotional and academic support and rely less on interactions with peers.
12	Hung (2021)	To investigate online CSL learner satisfaction and different factors affecting online learning, in order to improve learners' retention rate in online courses.	Online CSL Learners at Vietnam Foreign Language Center.	164	Qual	Advantages and Challenges of Online CSL Teaching.	1. Although online learning is flexible, it is necessary to complete the course content within the specified timetable. 2. The implementation of online CSL courses slightly reduces the satisfaction of students. The Internet connection problem leads to the lowest satisfaction of learners. Compared with the traditional model, online learners are more likely to retreat, and the retention rate is 10% -20% lower than that of traditional courses.
13	Gong et al. (2023)	Survey participants discuss online Chinese	Online CSL Teacher.	3	Qual	Challenges of Online CSL Teaching.	1. A major challenge in online Chinese teaching is the

		classroom teaching issues and techniques, providing insights for Chinese teachers in comparable situations, and practical consequences for online Chinese teaching.					lack of emotional connection. Communication barriers with students restrict teachers from using body language and facial expressions to help students
							2. Teacher-student interaction mainly relies on digital audio, coupled with network lag and environmental noise, which affects the fluency and accuracy of online teaching.
							3. Considering the privacy and feelings of students, students are not required to turn on their cameras online, which makes it difficult to form an emotional connection and brings challenges to understanding each other.
14	Chen (2021)	Examine the variables that affect foreign students' involvement in online CSL learning	International students participating in online CSL learning at Chinese universities.	194	MI	Advantages and Challenges of Online Teaching.	1. Online teaching presents a number of hurdles for Chinese language

		activities and the ways in which these variables interact to affect the students' propensity to participate in online learning in the future.	All students have passed HSK level 5.				instructors, including technological difficulties, learning styles, learning tactics, and some socioeconomic considerations. 2. For learners, online learning offers efficient practice with flexibility in time and location, enhancing language skills. The ease of interaction fosters strong social connections with peers and instructors. Moreover, reliable internet and devices are key to effective online Chinese learning. 3. Online learning through interaction. Time zones, technological issues, and communication hurdles can easily cause online students to study alone and discontinue their studies..
15	Wang et al. (2022)	Compare students' perceptions and experiences of	Learners studying Chinese in the United States	173	Quan	Advantages and Challenges of Online	1. The flexibility of online Chinese courses and the

		online Chinese learning in the two countries.	and CSL international students in China.			CSL Teaching.	integration of applications are the top reasons why they prefer online courses. 2. American CSL learners believe that online courses hinder the improvement of their speaking, listening and written Chinese skills. 3. Students dislike online courses mainly due to poor technical reliability and weak learning motivation. Poor connections and unreliable technology can disrupt teaching progress and cause emotional fluctuations among students.
16	Rahmat et al. (2021)	Examine how Chinese language acquisition in language courses is impacted by internet contact.	CSL learners in Malaysia.	173	Quan	Advantages and Challenges of Online CSL Teaching.	1. Online learning platforms have more advantages than disadvantages for language learners. They can help reduce the zone of proximal development, promote interaction

							between learners, and improve learning effects. 2. Technology, physical barriers, scheduling, and self-discipline demands can impact the physical and mental health of online learners.
17	Wang (2023)	Summarize the experience of CFL teachers in implementing emergency remote teaching during the epidemic.	Journal articles published between 2020.3.11-2022.9.18.	60	Qual	Challenges of Online CFL Teaching.	1. Online teaching creates physical and social isolation, places high demands on students' autonomy, affects classroom interaction, lacks timely feedback, and makes it difficult to implement activities, thus affecting learning effects. 2. Chinese language teachers lack technical guidance and training, and need to learn how to teach online through repeated experiments. 3. A few students reject the use of technology for

							online interaction. They avoid the impact of the Internet on their lives or worry about personal privacy disclosure.
18	Wang & East (2020)	Propose and reflect on factors that influence decisions about online distance learning courses.	Students in the introductory Chinese course at the University of Auckland.	163	Quan	Challenges of Online CFL Teaching.	1. Online teaching reduces commuting time, provides recordings for students to review, and has flexible schedules. Through decentralization, students have a higher motivation to participate in developing the curriculum. 2. Online teaching lacks the authenticity and density of traditional face-to-face courses, and the instability of Internet connection will affect the effectiveness of online learning. Moreover, The delay in voice transmission makes students feel frustrated in understanding the teacher's instructions and

							pronunciation. Many teachers and students have to turn off their cameras to ensure that the network is smooth enough, but they also miss the opportunity to communicate with each other.
19	Yan Ju & Yan Me (2020)	To explore beginners' attitudes and perceptions towards learning Chinese through animated videos.	Non-native Chinese language learners from different departments of a university in Malaysia.	86	MI	Advantages and Challenges of Online CSL Teaching.	1. Online CSL courses have many advantages: flexible schedules and environments, enhanced self-discipline and sense of responsibility among students, more academic choices, and opportunities to cultivate technical skills. 2. In online learning environments, communication between learners and teachers is mostly asynchronous, leading to isolated Chinese language learning environments. And limited practice can limit the

							development of language learners' oral abilities. 3. Lack of classroom interaction and delayed feedback can reduce learners' motivation to continue learning Chinese.
20	Lan & Chen (2014)	Conduct a comprehensive reflection on students' performance in online teaching practice from aspects such as teaching process, use of network tools, guidance of online learning activities, and interaction between teachers and students.	CFL learners at Taiwan Normal University.	46	Quan	Advantages and Challenges of Online CFL Teaching.	1. Online CSL learning can provide second language learners with a learning opportunity to have meaningful communication and interaction with high-level speakers of the target language. 2. Online teaching solely for the purpose of reducing teachers' burden often fails to enable learners to better participate in learning.
21	Ling et al. (2019)	Discuss the usefulness of e-learning to improve CSL students' language skills, especially Chinese language learning.	Undergraduate students taking an online introductory Chinese language course at a public	77	Quan	Advantages of Online CSL Teaching.	1. Most students believe that online learning platforms have a lot of help in improving their four language skills. Because online learning

			university in Malaysia.				is easy to obtain, it can establish students' learning experience and motivation, and focus on interaction and practice in learning. 2. While students are more responsible for their Chinese language learning, they also become more focused and autonomous in their work, which enables teachers to provide personalized assistance and better track student progress.
22	Bao et al. (2021)	Comprehensively examine the development trajectory of self-efficacy of a Chinese language teacher in a new teaching context.	CSL teachers who teach Chinese in Greece.	1	Quan	Advantages and Challenges of Online CFL Teaching.	1. Online teaching has gradually become a persistent and preferred interactive mode. Providing students with more learning resources outside of school, narrowing the geographical distance between teachers and students,

							<p>facilitating communication , and having a sense of belonging.</p> <p>2. In online CSL classes, students may come from different countries and regions, and their cultural backgrounds are very different.</p> <p>3. Online learners have greater autonomy, so they may also freely quit learning.</p> <p>4. Gaining relevance online is challenging due to limitations such as time differences and internet connectivity.</p>
23	Zhang & Du (2023)	To compare students' perceived communicative willingness levels when participating in face-to-face teaching and SCMC-based teaching.	College students taking elementary Chinese courses in the United States.	4	Qual	Advantages and Challenges of Online CFL Teaching.	<p>1. Online CSL learning is convenient, can enrich interpersonal communication , and introverted students may find a sense of security in maintaining physical distance from others.</p> <p>2. Online CSL teaching promotes teachers to</p>

							<p>master and integrate online tools, promoting the overall improvement of teaching quality.</p> <p>3. However, using a virtual background can hinder both parties from engaging in casual conversations in Chinese based on any existing prompts.</p>
24	Zhang (2020)	Based on narrative research, explore the methods of online Chinese character research during the epidemic.	Reflective narratives written by online CFL teachers.	5	Qual	Challenges of Online CFL Teaching.	<p>1. Online Chinese language teaching brings requirements for technical skills and computer knowledge to teachers and students, limited teacher-student interaction, and limited cooperation among learners.</p> <p>2. Excessive use of technology can lead to a misguided learning process that focuses on operating or navigating the machine rather than mastering Chinese in an</p>

							online environment.
25	Xu et al. (2022)	Explore the relevant predictive effects of learning motivation, anxiety and learning strategies on second language acquisition performance.	Thai adult CFL learners taking online Chinese courses.	90	Quan	Challenges of Online CFL Teaching.	<p>1. Online CSL learners feel unmotivated and anxious due to lack of intermediate feedback and teacher help, or interaction with classmates.</p> <p>2. In the context of isolated learning in online CSL, learners who lack self-discipline may be stimulated to engage in activities unrelated to learning.</p> <p>3. Some economically disadvantaged learners may not be able to access sufficient online learning resources, thereby increasing their emotional stress.</p>

Note: M: Method; P: Population; Quan: Quantitative; Qual: Qualitative; and MI: Mix method.

Discussion

The positive attitude and willingness of most students and teachers to participate in online Chinese language learning indicate a promising future for online language learning platforms (Yan Ju et al., 2022). For CSL teachers, smart use of online teaching resources can save lesson preparation time and increase teaching efficiency (Ai Min et al., 2022). This in turn releases teachers' creativity from more aspects, drives teachers to surpass themselves, inspires them to continuously improve their motivation to promote online education methods, and focus more on the most effective practice and innovation methods (Alsheikhidris & Alfatih, 2020). Secondly, as they get older, the majority of local Chinese CSL teachers choose to work in their home countries, which leaves Confucius Institutes without a framework for sustained

development to support its teaching staff. The shortage of foreign Chinese language instructors will become a bigger issue in the future (Nie, 2023). Remote online teaching solves the embarrassing situation faced by Chinese teachers. They do not have to go to the country where the learners are located to achieve the purpose of teaching Chinese, which greatly saves cost and time. However, if online teaching is purely aimed at reducing the burden on teachers, it is often difficult to engage learners better in learning (Lan & Chen, 2014).

For CSL learners, firstly, the flexibility of online Chinese courses is the primary reason why they enjoy online courses (Wang et al., 2022). Online learning breaks down geographical barriers, lowers commuting time, provides recordings for review, allows for flexible learning schedules, and gives students more opportunity to learn Chinese. What's more, Online learning is more affordable than traditional classroom settings and gives students the freedom to learn at their own speed and with complete autonomy (Rahmat et al., 2021). Secondly, for some students who are not confident or introverted, they can answer through the screen without fear of pronunciation. Students are more active when collaborating with peers in group discussion rooms, and are less afraid to ask the teacher privately in group discussion rooms than in front of the whole class (Gao & Shi, 2023).

Last but not least, the convenience of connection in online learning allows students to attain the social goal of keeping excellent relationships with their classmates and teachers (Chen, 2022). and provides CSL learners with opportunities to communicate and interact with high-level speakers of the target language (Lan et al., 2012). It enriches the cross-cultural learning experience of CSL students and cultivates a sense of belonging and connectivity, thus increasing learning engagement and satisfaction (Fan & Tian, 2024). There is more instability and uncertainty in online learning environments than in face-to-face traditional classes (Zhao, 2022).

For CSL teachers, first of all, online CSL classes can disrupt traditional courses, alienate teacher-student relationships, increase their dependence on them, distract students (Alsheikhidris & Alfatih, 2020), teachers may not be able to detect student distractions in a timely manner (Zhao, 2022), and teachers are not accustomed to using only voice instead of body language (Chia-Ling et al., 2014). Furthermore, some CSL teachers are reluctant to use technological tools in teaching due to lack of technical knowledge (Zhao, 2021). In order to improve the sound quality, teachers often turn off the video link, but this often increases the participant's sense of distance and lacks immediacy (Chia-Ling et al., 2014).

For CSL learners, firstly, network problems often interfere with the learning process (Ai Min et al., 2022), Internet connection problems lead to the lowest learner satisfaction (Hung, 2021). Poor network connections and unreliable technology not only disrupt teaching progress, but also cause emotional fluctuations among students, and even lead to a decline in grades (Wang et al., 2022). The network infrastructure, signal transmission speed, and effectiveness vary around the world, and the network situation during online courses also leads to "an information divide" among students. In addition, There is a lag in communication between teachers and students, and there is a lack of interaction in the classroom as a whole (Kong, 2021). Online learners may experience lack of motivation and anxiety due to a lack of intermediate feedback, teacher assistance, or interaction with classmates (Xu et al., 2022). Thirdly, Due to the consideration of privacy and the feelings of students, it is not mandatory

for students to turn on their webcam online, making mutual understanding between teachers and students more challenging (Gong et al., 2023).

In summary, online learning platforms have more advantages than disadvantages for language learners (Rahmat et al., 2021). Its main advantage is that it has a large amount of information, making it easy for students to choose; Breaking through the boundaries of time and space, providing students with a platform to fully express themselves; Cultivate students' ability to think independently. Meanwhile, online CSL learning also faces problems such as network lag, inability to achieve situational teaching, and single class interaction. How to create effective learning modes in the new environment is currently a challenge that CSL teaching needs to face.

Conclusion

This article provides a detailed analysis of the advantages and challenges of online CSL learning using the PRISMA framework. Among the collected documents, 25 met the regulations and standards, and data extraction was limited to English literature. The final research shows that online CSL teaching has great flexibility and convenience for most teachers and learners. However, network technology barriers and insufficient class interaction are currently issues that need to be paid attention to and solved. Against this background, the findings of this study have the potential to provide a fresh information viewpoint on online learning for future online CSL students, researchers, and curricular decision-makers.

At present, the online Chinese teaching platform is still in the experimental stage (Ling et al., 2019), both teachers and students need to be patient and help each other on technical issues. In the online Chinese language environment, teachers should have the ability to create more attractive and interactive learning experiences for learners (Hung, 2021). Students also need to be more self-disciplined, accountable for their own education, and capable of determining their own learning requirements and creating plans to progressively meet learning objectives. Due to the relatively small sample size, the survey findings may not be applicable to all groups of online CSL teachers and students, so researchers should strive to increase the sample size in future online Chinese studies.

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